

Sabulodes costinotata, new species.

Expanse 35 mm.

This is a species resembling, in almost everything except color, the ♀ of *S. arcasaria* (= *sulphurata* Pack.).

Palpi, head and collar dull purplish brown. Thorax, abdomen and upper surface of wings pale wood brown, paler than *S. furciferata* Packard. Markings as in *sulphurata* except that both outer and inner lines are more evident. The outer line is continued across the hind wings but there is no conspicuous spot at the termination of this line on the inner margin of the wing as there is in *sulphurata*. Beneath the markings are reproduced as in *sulphurata*. Discal dots distinct above and below.

The type specimens are three in number and are all females: Durango, Colorado, U. S. Nat. Museum, type no. 9800; Phoenix, Arizona (two specimens), in my collection.

Sicya snoviaria Hulst.

In the same collection (U. S. Nat. Mus.) there is another specimen on which I may comment here.

It is labelled "Santa Catalina Mts., Pinal Co., Arizona, April 8-15" and is a ♀ apparently conspecific with a ♂ in my own collection which I suppose to be the *Heterolocha snoviaria* Hulst, described from New Mexico. Hulst's type was a single ♂ and my specimen agrees well with the description except that it has a conspicuous basal line on the fore wing which is not mentioned by Hulst.

The ♀ specimen, however, has simple antennæ and very short palpi and therefore belongs to the genus *Sicya* and not to *Heterolocha* or *Neoterpes*. If my determination of *snoviaria* is correct, that species must be removed to *Sicya*; if otherwise then the specimens noted above will represent a new species in that genus.

DESCRIPTIONS OF TWO LEPIDOPTEROUS LARVÆ.

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LARVA OF SPHINGICAMPA HEILIGERODTH HARVEY.

Every autumn I collect on the desert close to the Salt River, near Phoenix, a few of *Gyascutus obliteratus*, a good Buprestid found on Palo Verde (*Parkinsonia microphylla*) and while thus engaged found for the first time in nine years the larva of *heiligerodthii*. This brilliant larva is readily detected, its silvered ornamentation reflected by

the sun makes it conspicuous on the tips of the minute-leaved Palo Verde, a small tree with few branches. Therefore it is impossible that on previous collecting, it could have escaped detection if present. I found the larva on September 28 and 29, 1904. From the size I judged it to be in latter part of third stage.

Larva covered by prominent spinulated tubercles, on a ground color of apple green. Face green, a white line on each side of triangular space, edged by a narrow black line. Mouthparts blackish. On joint 2, a circle of silvered granulation between spiracles. Thoracic tubercles spinulated, 6 mm. long. On joints 3 and 4, there are four spinulated tubercles, of which there are two on each side, one above the other. The subdorsal tubercle is of a purple or violet color, the lateral apple-green. Spinules of subdorsal tubercle black, those of lateral are green. From joints 5 and inclusive to 12 there are on each side two silvered tubercles, wedge-shaped, one above the other, the inferior resting on the infrspiracular line. All the lateral tubercles on inner side bright red. A circle of silvered granulations just back of tubercles of each joint. On joint 13, a spinulated tubercle, 4 mm. long, green on tip, reddish brown at base; spinules tipped with green and whitish at base. Three small, silvered tubercles on last joint above anal plate. Between the dorsal tubercles of each joint, two silvered granulations. Anal plate lined by a triangle of white granulations. Thoracic legs green, only granulated at base. Prolegs much granulated from base to feet or clasping part which is brownish. Abdominal part concolorous with dorsal. Spiracles black. Infrspiracular line pink with lilac reflection, much the same as in *H. iv.*

Length at rest 29 mm. or $1\frac{1}{4}$ inch, in motion 32 mm. or $1\frac{1}{4}$ inch. Width 5 mm. or $\frac{3}{8}$ inch.

October 24, 1904, I discovered a full-grown larva of this Sphingicampid on a mesquite tree in a grove of my cactus garden, close to my tent-house, and on the second day went again to the desert, where I had taken the first larva, with the result of adding four more full-grown larvæ, of which one was crippled. I spent that day and the following hunting that larva—all on *P. microphylla*, the leaves of which are so very small that I offered a larger-leaved species, *Parkinsonia torreyana*, to my captures, which proved acceptable. I had *torreyana* growing in my garden and saved time by using it instead of the other. The cripple I put in alcohol, and mailed it to Prof. A. S. Packard. I noticed the following change in this second lot of larvæ, all of which pupated within two days after capture.

General color apple-green. Mouthparts brownish. Antennæ white. Outer or exterior side of the tubercles white, and but little spinose. Inner side pink, tipped white, at the base green, little spinose. Small tubercles silvered, tipped pink, cuneiform and pointed, the outer surface dazzling in the sunlight like a mirror. Dorsal row of tubercles longest, 2 mm. long. Subdorsal tubercles $1\frac{1}{2}$ mm. long.

A spinose tubercle on penultimate joint pink, tipped white, at base green. Spiracular line violet-lavender. Spiracles black, edged white. Thoracic feet green, toes brownish. Abdominal feet and toes brownish, at base green.

Length at rest, 45 mm.; in motion, 54 mm.; diameter 8 mm.

Larvæ pupated in stone jar, partly filled with a sandy loam, and a few weeks later removed three pupæ, of the usual shape of a *Sphingicampa*. May 10, 1905, a fine ♀ emerged, which during the night oviposited a few ova of a transparent, pea-green tint. August 8th another ♀ emerged which not being looked for, had become a total wreck. Of all the larvæ I ever have seen or bred East or West, this Sphingicampid is the most beautifully marked and ornamented. Its proper habitat is southeastern Texas and Mexico. I have received the imago from Comal County, Texas.

LARVA OF COPIDRYAS COSYRA DRUCE.

During August, 1904, I discovered some larvæ feeding on the tender young joints of a cactus — *Opuntia arbuscula*, a prickly-pear — having cylindrical branches or segments, of which I cultivated a bed on my cactus ranch. The plants I had collected fifteen miles north of town in February of the same year. The larva was of cylindrical shape, olivaceous in color, and more or less covered with fine hairs. I sent two to Dr. Harrison G. Dyar, with some of the foodplant. The larvæ were inflated for the U. S. Nat. Museum, but he was unable to recognize the insect. In the meantime I caged a number of good-sized larvæ in a stone jar containing loam, and obtained six or eight pupæ, which transformed a few inches below the surface. Early in the spring of 1905, I sent all these pupæ to Dr. Dyar, inasmuch as I had often to absent myself, collecting cacti all over this territory for export, and could not watch the pupæ. In due course of time Dr. Dyar informed me that he had obtained imagines of *Copidryas cosyra*, from the pupæ I sent him, and requested I should watch for more of these larvæ and take notes during breeding of the same.

Early in August I found this larva again on the prickly pear, from one half up to three fourths inch in length, and in a few days collected eleven or twelve larvæ. Not having an empty stone jar convenient, I had to place the young larvæ in a tin canister, which was kept inside of my tent-house. We had the hottest summer for a decade, with a temperature of 115 degrees in the shade and the larvæ were killed.

The first larvæ I found August 9, 1905, and the smallest measured 12 mm. in motion, and 2 mm. in width.

General ground color olivaceous brown. A white dorsal interrupted line, and two white subdorsal lines. On each joint a transverse row of short black tubercles, encircled by a white line. A long white hair from the point of the black tubercle. On joints 2, 3 and 4 were four tubercles, of which the middle ones were smallest. On joint 5 were four larger tubercles of equal size. On joint 6 were six tubercles, on joint 7 were eight tubercles, of which some very small. On joint 8 were six tubercles, two of which much larger. On joints 9 and 10 also six tubercles, but so small on the last, it was difficult to ascertain exact number. On joint 11 there were four tubercles in the row, preceded by two anteriorly on the dorsum. On joint 12 were placed six tubercles in two rows like the preceding segment, but larger. On the last joint four small tubercles. Head black with two white tubercles on occiput. Mouthparts blackish. Thoracic feet black. Clasper blackish.

August 10 noted a larva of 20 mm. length, 3 mm. width.

Head oval; a white triangular mark in the middle. On each side two convex bodies meeting at the vertex, shining, mottled olivaceous and white, covered by a few small white hairs. Mouthparts blackish. On the second joint twelve black tubercles, of which two dorsal and two subdorsal, the largest covered by hairs, and the four lowest crowded together. On third joint are twelve black tubercles, the four uppermost largest, and the lower lateral only one-fourth as large. On joint 4 the same. On joints 5, 6 and 7 the two tubercles each side of central dorsal line are larger than any other of the body. On joint 5 the smallest tubercles number five on each side, on joint 6 are five tubercles near intraspiracular line, rather crowded, and on joint 7 are only four on each side. On joint 8 ten tubercles. On joint 9 and 10 twelve tubercles. On joint 11 ten tubercles, on the penultimate, twelve tubercles. On joint 13 are a number of minute, scattered tubercles. Below the clasper two larger black tubercles. Thoracic and abdominal legs black. The penultimate and preceding joint more brownish than olivaceous. Surface of body smooth, shining.

August 19, most of the larvæ perished. The last and largest was $28\frac{1}{2}$ mm. in length, and 6 mm. in width at the middle of the body, and 5 mm. at penultimate joint.

Longest hairs $4\frac{1}{2}$ mm. in length. The hairs on head and joint 2, as well as on the penultimate and last joint, only half so long. Width of head $3\frac{1}{2}$ mm. Face oval, ornamented by black spots. An irregular black groove between checks and vertex. Eyes black, edged white above. Lips whitish. Ground color ivory white. Four white longitudinal lines $\frac{1}{2}$ mm. in width, irregular in outline. Intraspiracular line not quite so wide. There is more white color on joints 5 and 11 than any other. The white of joint 3 uniform in width. Tubercles on all joints longer, otherwise much the same. Joint 12 is much wider than any other. Anal plate irrorated black on white surface. Clasper much the same in color as the prolegs, with black on outer parts. Spiracles black, encircled by a white line. Exterior surface of thoracic feet pitchy black, shining, the same as external surface of prolegs. Inner side of thoracic feet cinereous. Inner side of prolegs white. Between prolegs the adominal surface is a kind of pinkish ochraceous. On the segment anteriorly to prolegs, the black tubercles edged white, form a continuous band around body, but smaller on the abdominal surface, also hairs on the abdominal tubercles. The general ground color is more ligneous than olivaceous as previously.